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PETITION FEE
Under 37 CFR 1.17(f), (g) & (h)
TRANSMITTAL
(Fees are subject to annual revision)

Send completed form to: Commissioner for Patents
P.O. Box 1450, Alexandria, VA 22313-1450

Application Number	**10/766,015**
Filing Date	**January 29, 2004**
First Named Inventor	**A. KANO, et al**
Art Unit	
Examiner Name	
Attorney Docket Number	**500.43451X00**

Enclosed is a petition filed under 37 CFR §1.102(d) that requires a processing fee (37 CFR 1.17(f), (g), or (h)). Payment of $ 130.00 is enclosed.

This form should be included with the above-mentioned petition and faxed or mailed to the Office using the appropriate Mail Stop (e.g., Mail Stop Petition), if applicable. For transmittal of processing fees under 37 CFR 1.17(i), see form PTO/SB/17i.

Payment of Fees (small entity amounts are NOT available for the petition (fees)

☒ The Commissioner is hereby authorized to charge the following fees to Deposit Account No. 50-1417:
☐ petition fee under 37 CFR 1.17(f), (g) or (h) ☒ any deficiency of fees and credit of any overpayments
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Petition Fees under 37 CFR 1.17(f): Fee $400 Fee Code 1462
For petitions filed under:
§ 1.53(e) - to accord a filing date.
§ 1.57(a) - to according a filing date.
§ 1.182 – for decision on a question not specifically provided for.
§ 1.183 – to suspend the rules.
§ 1.378(e) for reconsideration of decision on petition refusing to accept delayed payment of maintenance fee in an expired patent.
§ 1.741(b) – to accord a filing date to an application under §1.740 for extension of a patent term.

Petition Fees under 37 CFR 1.17(g): Fee $200 Fee code 1463
For petitions filed under:
§1.12 - for access to an assignment record.
§1.14 - for access to an application.
§1.47 - for filing by other than all the inventors or a person not the inventor.
§1.59 - for expungement of information.
§1.103(a) - to suspend action in an application.
§1.136(b) - for review of a request for extension of time when the provisions of section 1.136(a) are not available.
§1.295 - for review of refusal to publish a statutory invention registration.
§1.296 - to withdraw a request for publication of a statutory invention registration filed on or after the date the notice of intent to publish issued.
§1.377 – for review of decision refusing to accept and record payment of a maintenance fee filed prior to expiration of a patent.
§1.550(c) – for patent owner requests for extension of time in ex parte reexamination proceedings.
§1.956 – for patent owner requests for extension of time in inter partes reexamination proceedings.
§ 5.12 – for expedited handling of a foreign filing license.
§ 5.15 – for changing the scope of a license.
§ 5.25 – for retroactive license.

Petition Fees under 37 CFR 1.17(h): Fee $130 Fee Code 1464
For petitions filed under:
§1.19(g) – to request documents in a form other than that provided in this part.
§1.84 – for accepting color drawings or photographs.
§1.91 – for entry of a model or exhibit.
§1.102(d) – to make an application special.
§1.138(c) – to expressly abandon an application to avoid publication.
§1.313 – to withdraw an application from issue.
§1.314 – to defer issuance of a patent.

Name (Print/Type)	**Carl I. Brundidge**	*Registration No. (Attorney/Agent)*	**29,621**
Signature		*Date*	July 12, 2005

500.43451X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: A. KANO, et al

Serial No.: 10/766,015

Filed: January 29, 2004

For: DISK ARRAY SYSTEM AND METHOD FOR CONTROLLING DISK ARRAY SYSTEM

PETITION TO MAKE SPECIAL
UNDER 37 CFR §1.102(MPEP §708.02)

MS Petition
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

July 12, 2005

Sir:

Applicants hereby petition the Commissioner to make the above-identified application special in accordance with 37 CFR §1.102(d). Pursuant to MPEP §708.02(VIII), Applicants state the following.

(A) This Petition is accompanied by the fee set forth in 37 CFR §1.17(h).

The Commissioner is hereby authorized to charge any additional payment due, or to credit any overpayment, to Deposit Account No. 50-1417.

(B) All claims are directed to a single invention.

If the Office determines that all claims are not directed to a single invention, Applicant will make an election without traverse as a prerequisite to the grant of special status in conformity with established telephone restriction practice.

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(C) A pre-examination search has been conducted.

The search was directed towards a storage system. In particular, the search was directed towards a disk array system including a controller for controlling the writing of data to a plurality of storage regions and the reading of data from the storage regions, and a plurality of disk drives having the storage regions and having a plurality of first type disk drives each of which has a first type interface and a plurality of second type disk drives each of which has a second type interface. According to the present invention the controller controls whether an examination of data stored in the disk drives is performed based on whether data to be examined is stored in the second type disk drives in which the examination is performed or in the first type disk drives in which the examination is not performed. Further, according to the present invention the examination is performed by the controller whether data stored in the second type disk drives is in a false state or not.

The search of the above features was conducted in the following areas:

Class	Subclasses
710	1, 5, 104
711	112, 114, 162
714	5, 6, 42

Additionally, a computer database search was conducted on the USPTO systems EAST and WEST.

(D) The following is a list of the references deemed most closely related to the subject matter encompassed by the claims:

U.S. Patent Application Publication No.	Inventor(s)
2002/0019897	Cruyningen
2003/0110330	Fujie
2003/0212859	Ellis
2003/0221061	El-Batal et al
2004/0010660	Konshak et al

Published References	**Author**
EMC 2-Gigabit Disk-Array Enclosure (DAE2), FC and ATA Models, Hardware Reference P/N 014003048, Rev A02	EMC Corporation

A copy of each of these references (as well as other references uncovered during the search) is enclosed in an accompanying IDS.

(E) It is submitted that the present invention is patentable over the references for the following reasons.

It is submitted that the cited references, whether taken individually or in combination with each other, fail to teach or suggest the invention as claimed. In particular, the cited references, at a minimum, fail to teach or suggest in combination with the other limitations recited in the claims:

a first feature of the present invention as recited in independent claim 21 wherein a plurality of disk drives have storage regions and a plurality of first type disk drives each of which has a first type interface and a plurality of second type disk drives each of which has a second type interface; and

a second feature of the present invention as recited in independent claim 21, wherein the controller controls whether an examination of data stored in the disk drive is performed based on whether data to be examined is stored in the second type disk drive in which examination is performed or in the first type disk drive in which examination is not performed.

To the extent applicable to the present Petition, Applicants submit that although the distinguishing feature(s) may represent a substantial portion of the claimed invention, the claimed invention including said feature(s) and their inter-operation provides a novel storage system and system and method related to or implemented in or by said storage system not taught or suggested by any of the references of record.

The references considered most closely related to the claimed invention are briefly discussed below:

Konshak (U.S. Patent Application Publication No. 2004/0010660) shows a multi-element storage array with a Fiber Channel interface, SCSI and ATA storage devices and a processor programmable to receive data access commands in a first format and issue data access commands to the controller in a second format different from the first format, the second format data access commands implementing the first format data access commands. See claims 2, 7, 16, 24, 33, 37, 40, and 42.

Konshak fails to teach or suggest the above described features of the present invention wherein the disk array system includes a plurality of disk drives having storage regions and having a plurality of first type disk drives each of

which has a first type interface and a plurality of second type disk drives each of which has a second type interface and that the controller controls performance of an examination of data stored on the disk drives depending on the type of disk drive as recited in the claims.

More particularly, Konshak does not teach or suggest the above described first feature of the present invention as recited in independent claim 21 and the above described second feature of the present invention as recited in independent claim 21 in combination with the other limitation recited in each of the independent claims.

Fujie (U.S. Patent Application Publication No. 2003/0110330) discloses a system and method of transferring data from a secondary storage controller to a storage media after failure of a primary storage controller. Particularly, Fig. 1 discloses a storage unit 10 having redundant arrays A and B which are connected to controllers 14 and 16 via a connection 12. The controllers 14 and 16 are connected to each other by a bus line 18. Each of the controllers 14 and 16 includes a Serial ATA (SATA) interface 32 and 48 respectively as illustrated in Fig. 2. As shown in Fig. 2, the storage controller includes a fiber channel connector 24, a processor 26, a fiber channel host protocol control means 28 for controlling a protocol between the fiber channel connector 24 and the processor 26, and cache memory 30 connected to the processor 26, wherein the cache memory 30 stores transfer data. In the storage unit 10, the controller 14 is connected by connection means 34 and the SATA 32 to storage media 36a-36h.

The controller 16 has a similar construction. See sections [0033] – [0036], [0039]-[0044] and Figs. 1 and 2.

As understood, Fujie fails to teach or suggest the above described features of the present invention wherein the disk array system includes a plurality of disk drives having storage regions and having a plurality of first type disk drives each of which has a first type interface and a plurality of second type disk drives each of which has a second type interface and that the controller controls performance of an examination of data stored on the disk drives depending on the type of disk drive as recited in the claims.

More particularly, Konshak does not teach or suggest the above described first feature of the present invention as recited in independent claim 21 and the above described second feature of the present invention as recited in independent claim 21 in combination with the other limitation recited in each of the independent claims.

Ellis (U.S. Patent Application Publication No. 2003/0212859) discloses a storage system 300 as illustrated in Figs. 3 and 4 having a storage system controller 302 and at least one storage media 311. The storage system controller 302 includes a plurality of media controllers 301 each being coupled to a local microprocessor 306, host interface logic 310 and at least one storage media 311. As taught, the storage system 300 replaces a single ATA, SCSI or fire wire storage media with an array of storage media 311. The multiple media storage system 300 appears to the host as a single ATA storage media, a single SCSI storage media or a single fire wire storage media. The host interface 316

may take any of several forms including ATA, SCSI, FC or Ethernet. The host interface implements an ATA interface, a SCSI interface, FC interface and ISCSI interface so as to relieve the host of actually providing multiple storage medium interfaces 401 and drivers. See sections [0040]-[0048] and Figs. 3 and 4.

Ellis fails to teach or suggest the above described features of the present invention wherein the disk array system includes a plurality of disk drives having storage regions and having a plurality of first type disk drives each of which has a first type interface and a plurality of second type disk drives each of which has a second type interface and that the controller controls performance of an examination of data stored on the disk drives depending on the type of disk drive as recited in the claims.

More particularly, Ellis does not teach or suggest the above described first feature of the present invention as recited in independent claim 21 and the above described second feature of the present invention as recited in independent claim 21 in combination with the other limitation recited in each of the independent claims.

El-Batal (U.S. Patent Application Publication No. 2003/0221061) relates to a serial interface for a data storage array. El-Batal may support a RAID configuration. See section [0053]. The system may be compatible with standard ATA (see FIG. 4A, section [0050]), and Serial ATA, SATA (see FIG. 4B, section [0051]). FIG. 5, illustrates that controller 501 has a serial interface 511 connected to each device 515 in array 525 in point-to-point fashion. The serial interface 511 is provided for the data storage array in which an array of data

storage devices is an array of serial ATA data storage devices and a device controller is coupled to a network by a Fiber Channel (FC) link. As taught a controller 201 may also include specialized circuitry for performing error checking, for example, circuitry to calculate the exclusive OR function for generating parity. See sections [0052] and [0045] and claims 15 and 19.

There is no teaching or suggestion in El-Batal of the above described features of the present invention wherein the disk array system includes a plurality of disk drives having storage regions and having a plurality of first type disk drives each of which has first type interface and a plurality of second type disk drives each of which has a second type interface and that the controller controls performance of an examination of data stored on the disk drives depending on the type of disk drive as recited in the claims.

More particularly, El-Batal does not teach or suggest the above described first feature of the present invention as recited in independent claim 21 and the above described second feature of the present invention as recited in independent claim 21 in combination with the other limitation recited in each of the independent claims.

Cruyningen (U.S. Patent Application Publication No. 2002/0019897) shows a data storage system, comprising a fiber channel loop, a first plurality of storage devices coupled to the fiber channel loop, a loop resiliency circuit coupled to the fiber channel loop. The loop resiliency circuit having an interface to couple to a second storage channel that is coupled to a second plurality of storage devices, and the loop resiliency circuit to separate the fiber channel loop

from the second storage channel in a first state and to connect the fiber channel loop and the second storage channel in a second state, including configurations with any type of storage channel, such as ATA, SCSI, and SSA in addition to FC-AL storage channels. See paragraphs 14-19 and 71.

Cruyningen fails to teach or suggest the above described features of the present invention wherein the disk array system includes a plurality of disk drives having storage regions and having a plurality of first type disk drives each of which has a first type interface and a plurality of second type disk drives each of which has a second type interface and that the controller controls performance of an examination of data stored on the disk drives depending on the type of disk drives as recited in the claims.

More particularly, Cruyningen does not teach or suggest the above described first feature of the present invention as recited in independent claim 21 and the above described second feature of the present invention as recited in independent claim 21 in combination with the other limitation recited in each of the independent claims.

EMC Publication (2-Gigabit Disk-Array Enclosure (DAE2), FC and ATA Models, Hardware Reference P/N 014003048, Rev A02) discloses information about the EMC 2-Gigabit disk-array enclosure (DAE2) hardware for Fiber Channel disks and Advance Technology Attachment drives. The DAE2 enclosure discloses the use of a Fiber Channel Arbitrated Loop (FC-AL) as its interconnect interface. The enclosure can be connected to another DAE2 or a processor and is managed by store system software in RAID configurations. The

enclosure has a standard version which includes Fiber Channel disk drives and FC-AL link control cards to manage them, whereas the DAE2 –ATA version uses ATA disk drives and FC-2-ATA link control card to manage the disk and provide an interface between the FC-AL and disk drives. Attention is directed to the passages on page 1-5, the second paragraph as on page 1-7 and the passages on pages 3-6 and 3-17 of the EMC publication. As discussed on each of these passages, two Link Control Cards (LCCs) are provided which are connected to the mid-plane within the enclosure so as to convert between fiber channel signals and the ATA protocol.

However, as understood, the EMC publication does not teach or suggest the features of the present invention, wherein plural SATA or ATA drives are connected under a controller of the disk apparatus and wherein each SATA drive includes a FC-Serial ATA converter or a serial interface-ATA converter that is built-in to each drive so as to provide the interfacing. DAE2 as disclosed in the EMC publication does not show a built-in type converter, nor does it show that one converter is provided with respect to one disk drive as in the present invention.

More particularly, the EMC publication does not teach or suggest the above described first feature of the present invention as recited in independent claim 21 and the above described second feature of the present invention as recited in independent claim 21, in combination with the other limitation recited in each of the independent claims.

Therefore, since the cited references fail to teach or suggest the above

described first and second features recited in independent claim 21, it is submitted that all of the claims of the present application are patentable over the cited references whether taken individually or in combination with each other.

F. Conclusion

Applicant has conducted what it believes to be a reasonable search, but makes no representation that "better" or more relevant prior art does not exist. The United States Patent and Trademark Office is urged to conduct its own complete search of the prior art, and to thoroughly examine this application in view of the prior art cited herein and any other prior art that the United States Patent and Trademark Office may locate in its own independent search. Further, while Applicant has identified in good faith certain portions of each of the references listed herein in order to provide the requisite detailed discussion of how the claimed subject matter is patentable over the references, the United States Patent and Trademark Office should not limit its review to the identified portions but rather, is urged to review and consider the entirety of each reference, and not to rely solely on the identified portions when examining this application.

In view of the foregoing, Applicant requests that this Petition to Make Special be granted and that the application undergo the accelerated examination procedure set forth in MPEP 708.02 VIII.

G. Fee (37 C.F.R. 1.17(i))

The fee required by 37 C.F.R. § 1.17(i) is to be paid by:

[X] the Credit Card Payment Form (attached) for $130.00.

[ ] charging Account _____ the sum of $130.00.

A duplicate of this petition is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (500.43451X00).

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

Carl I. Brundidge
Reg. No. 29,621

CIB/jdc
(703) 684-1120